

WHAT IS CLAIMED IS:

1. A rotary damper comprising:  
first and second chambers which are separated by a partition wall;  
a rotor which is rotatably arranged within said first chamber;  
a viscous material which is filled in a slight gap between said rotor and a slidable contact surface slidably contacted with said rotor;  
a viscous fluid which is filled in said second chamber; and  
a vane which is swingably arranged within the second chamber filled with said viscous fluid.
2. A rotary damper as claimed in claim 1, wherein said rotary damper is provided with a valve mechanism which generates a resistance of said viscous fluid only in the case that said vane is oscillated in one direction.
3. A rotary damper as claimed in claim 1 or 2, wherein a spring member energizing a rotation of said rotor in one direction is provided within said first chamber.
4. A rotary damper as claimed in claim 3, wherein the rotary damper is provided with a first rotary shaft which is connected to one of two controlled subjects independently rotatable with each other, and is rotated by a rotation of said controlled subject so as to rotate said rotor, a second rotary shaft which is connected to another of said two controlled subjects, and is rotated by the rotation of said controlled subject so as to oscillate said vane, and said first rotary shaft is provided so as to freely move forward and backward by utilizing an elasticity of said spring member.
5. A rotary damper as claimed in claim 4, wherein said first and second rotary shafts are concentrically arranged.
6. A rotary damper as claimed in any one of claims 1 to 3, wherein the rotary damper is provided with a first rotary shaft which is connected to one of two controlled subjects independently rotatable with each other, and is rotated by a rotation of said controlled subject so as to rotate said rotor, a second rotary shaft which is connected to another of said two controlled subjects, and is rotated by the rotation of said controlled subject so as to oscillate said vane, and said first rotary shaft is inserted into a hollow portion formed along an axis of said second rotary shaft in a penetrating manner.

7. A rotary damper as claimed in any one of claims 3 to 6, wherein a direction in which said spring member energizes the rotation of said rotor is set to an opposite direction to an oscillating direction of said vane generating the resistance of said viscous fluid.
8. A rotary damper as claimed in any one of claims 1 to 7, wherein said second chamber is formed along an outer peripheral surface of said partition wall.
9. A rotary damper as claimed in any one of claims 2 to 8, wherein said valve mechanism has a fluid passage which allows said viscous fluid to pass through, and a flow rate adjusting valve which automatically adjusts a flow rate of the viscous fluid passing through said fluid passage in correspondence to a load change in accordance with a change of a moment of rotation of the controlled subject.
10. A rotary damper as claimed in claim 9, wherein said flow rate adjusting valve is constituted by a leaf spring, and is provided so as not to close said fluid passage in a normal state.
11. A rotary damper as claimed in claim 10, wherein said flow rate adjusting valve is deflected such that one surface side forming a pressure receiving surface is protruded.
12. A rotary damper as claimed in claim 11, wherein said flow rate adjusting valve is formed such that a width in a middle portion positioned between both end portions is smaller than a width in both the end portions.
13. A console box having a double lid independently rotatable with each other, wherein the console box is provided with the rotary damper as claimed in any one of claims 1 to 12 having a rotor which rotates in accordance with a rotation of a shaft forming a rotation center of an outer lid in said double lid, and a vane which oscillates in accordance with a rotation of a shaft forming a rotation center of an inner lid in said double lid.